

### **A b s t r a c t**

An electronic compressed air system for vehicles is provided with a compressed air supply part (4) provided with a compressor (7) and a compressed air consumer part (6) with a plurality of compressed air load circuits (26, 28, 30, 32, 34, 36, 38), which comprise an air-suspension circuit (38) and service-brake circuits (26, 28) provided with compressed air reservoirs (90, 92). The compressed air load circuits are supplied with compressed air via solenoid valves (16, 18, 20, 22, 24). The pressure in the compressed air load circuits is monitored by pressure sensors (72, 74, 76, 78, 80), whose electrical pressure signals are evaluated by an electronic control unit (84) that controls the solenoid valves. The solenoid valve (24) of the air-suspension circuit (38), which is designed without compressed air reservoirs, is closed in the de-energized normal state, whereas the solenoid valves (16, 18, 20, 22) of the further compressed air load circuits (26, 28, 30, 32, 34, 36), especially of the service-brake circuits (26, 28), are open in the de-energized normal state. In the case of a pressure demand of the air-suspension circuit (38), the solenoid valve (24) thereof, by means of data communication, is switched by the electronic control unit (84) to open position to establish communication with the compressed air supply part (4) and/or with the service-brake circuits (26, 28) or with the compressed air reservoirs (90, 92) thereof, in order to refill the air-suspension circuit.